

PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)
(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference 24656 AWT | FOR FURTHER ACTION | See Form PCT/IPEA/416 |
| International application No. PCT/AU2004/001525 | International filing date (day/month/year) 5 November 2004 | Priority date (day/month/year) 6 November 2003 |
| International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ H01H 13/702; 13/705, H05K 1/16, H01R 12/00 | | |
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|--|--------------|---|-----------|---------------------|--------------------------|------------|----------|--------------------------|-------------|--|--------------------------|------------|----------------------------|-------------------------------------|-----------|---|--------------------------|------------|-------------------------|--------------------------|-------------|--|--------------------------|--------------|---|
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 3 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:</p> <div style="margin-left: 40px;"> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> </div> <p style="margin-left: 20px;">b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>4. This report contains indications relating to the following items:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;"><input checked="" type="checkbox"/></td> <td style="width: 20%;">Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> | | <input checked="" type="checkbox"/> | Box No. I | Basis of the report | <input type="checkbox"/> | Box No. II | Priority | <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | <input type="checkbox"/> | Box No. IV | Lack of unity of invention | <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | <input type="checkbox"/> | Box No. VI | Certain documents cited | <input type="checkbox"/> | Box No. VII | Certain defects in the international application | <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. II | Priority | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention | | | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. VI | Certain documents cited | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application | | | | | | | | | | | | | | | | | | | | | | | |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application | | | | | | | | | | | | | | | | | | | | | | | |

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| Date of submission of the demand 5 September 2005 | Date of completion of the report 9 September 2005 |
| Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929 | Authorized Officer AMOD PRADHAN Telephone No. (02) 6283 2510 |

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AU2004/001525

Box No. I **Basis of the report**

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language which is the language of a translation furnished for the purposes of:

☐ international search (under Rules 12.3 and 23.1 (b))

☐ publication of the international application (under Rule 12.4)

☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

☐ the international application as originally filed/furnished

☒ the description:

pages 1 – 21 as originally filed/furnished

pages* received by this Authority on with the letter of

pages* received by this Authority on with the letter of

☒ the claims:

pages as originally filed/furnished

pages* as amended (together with any statement) under Article 19

pages* 22 – 23 received by this Authority on 5 September 2005 with the letter of 5 September 2005

pages* received by this Authority on with the letter of

☒ the drawings:

pages 1/10 – 10/10 as originally filed/furnished

pages* received by this Authority on with the letter of

pages* received by this Authority on with the letter of

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages

☐ the claims, Nos.

☐ the drawings, sheets/figs

☐ the sequence listing (*specify*):

☐ any table(s) related to the sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages

☐ the claims, Nos.

☐ the drawings, sheets/figs

☐ the sequence listing (*specify*):

☐ any table(s) related to the sequence listing (*specify*):

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AU2004/001525

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|--------------|-----|
| Novelty (N) | Claims 1 – 9 | YES |
| | Claims | NO |
| Inventive step (IS) | Claims 1 – 9 | YES |
| | Claims | NO |
| Industrial applicability (IA) | Claims 1 – 9 | YES |
| | Claims | NO |

2. Citations and explanations (Rule 70.7)

NOVELTY (N); INVENTIVE STEP (IS) & INDUSTRIAL APPLICABILITY (IA)**Claims 1 – 9**

The invention defined in the present amended claims relates to a switch element characterised in the provision of a contact element, and a bearer element, both being separate elements and being constructed from a conductive material and assembled together and the bearer element has a planar base to enable it to be affixed to a conductive track on a printed circuit board. This arrangement allows the switch element to be placed and fused onto a printed circuit board and it does not require a cover to hold it in place.

None of the cited prior art documents disclose this precise arrangement and consequently, the invention defined in the present amended claims is novel. The invention also possesses an inventive step because the claimed invention is not considered to be obvious over the cited prior art documents on their own or in any combination of the said documents.

The invention defined in the present claims is suitable for industrial application.

CLAIMS

1. A switch element for surface mounting onto a printed circuit board,
the switch element having a bearer element and a contact element, both the
5 bearer element and the contact element being formed from an electrically
conductive material and the contact element being formed from a resilient
material, the bearer element and the contact element being separate
components assembled together whereby the bearer element comprises a
peripheral retainer for the contact element and the bearer element comprises
10 a substantially planar base to enable it to be affixed to a conductive track on a
printed circuit board.
2. A switch element as in Claim 1 wherein the contact element is a
shallow dome shape.
15
3. A switch element as in Claim 1 wherein the bearer element comprises
an inwardly facing C-shaped cross sectional shape to provide a recess to act
as the peripheral retainer for the contact element by receiving at least a
portion of a rim of the contact element in the C-shaped member recess.
20
4. A switch element as in Claim 1 wherein the substantially planar base
includes a surface selected from the group comprising plated, tinned, coated
with a metal or alloy or a solder paste whereby to facilitate bonding of the
planar base to the printed circuit board.
25
5. A switch element as in Claim 1 wherein the planar base comprises an
inner periphery with a slight downwards angle to contact a printed circuit
board in use and form a barrier against the ingress of soldering fluxes or
other residues of a fixing process.
30

6. A switch element as in Claim 1 wherein the planar base comprises an inner periphery with a slight upturned edge.
7. A switch element as in Claim 1 wherein the bearer element comprises
5 at least one bridge around its periphery to enable the bearer element to bridge tracks on the printed circuit board onto which it is mounted in use.
8. A switch element as in Claim 7 wherein the bearer element comprises a shape selected from the group comprising circular, square, rectangular or
10 triangular and the contact element received in the bearer element comprises a corresponding shape either with a continuous periphery or with legs extending into the recess of the bearer element.
9. A switch element for surface mounting onto a printed circuit board,
15 the switch element having a bearer element and a contact element, both the bearer element and the contact element being formed from an electrically conductive material and the contact element being formed from a resilient material, wherein the bearer element comprises an inwardly facing C-shaped cross sectional shape to provide a recess to act as a peripheral retainer for the
20 contact element by receiving at least a portion of a rim of the contact element in the C-shaped member recess.